DATE: 11/07/2001

TIME: 15:14:33

OIPE

#3

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/676,436

Input Set : A:\RTS-0169_Seq_ASCII.txt Output Set: N:\CRF3\11072001\1676436.raw 3 <110> APPLICANT: Donna T. Ward William Gaarde Brett P. Monia Jacqueline Wyatt 8 <120> TITLE OF INVENTION: ANTISENSE MODULATION OF MEKK4 EXPRESSION 10 <130> FILE REFERENCE: RTS-0169 C--> 12 <140> CURRENT APPLICATION NUMBER: US/09/676,436 C--> 12 <141> CURRENT FILING DATE: 2000-09-29 12 <160> NUMBER OF SEQ ID NOS: 89 15 <210> SEQ ID NO: 1 ENTEREC 16 <211> LENGTH: 20 17 <212> TYPE: DNA 18 <213> ORGANISM: Artificial Sequence; W--> 20 <220> FEATURE: 20 <223> OTHER INFORMATION: Antisense Oligonucleotide 22 <400> SEQUENCE: 1 23 tecgteateg etecteaggg ENTERED 26 <210> SEQ ID NO: 2 27 <211> LENGTH: 20 28 <212> TYPE: DNA 29 <213> ORGANISM: Artificial Sequence W--> 31 <220> FEATURE: 31 <223> OTHER INFORMATION: Antisense Oligonucleotide 33 <400> SEQUENCE: 2 34 atgcattctg cccccaagga 20 37 <210> SEO ID NO: 3 38 <211> LENGTH: 4990 39 <212> TYPE: DNA 40 <213> ORGANISM: Homo sapiens 42 <220> FEATURE: 43 <221> NAME/KEY: CDS 44 <222> LOCATION: (1)...(4476) 46 <400> SEQUENCE: 3 47 cta gaa gac ttc tcc gat gaa aca aat aca gag aat ctt tat ggt acc **4** R 48 Leu Glu Asp Phe Ser Asp Glu Thr Asn Thr Glu Asn Leu Tyr Gly Thr 51 tot occ occ ago aca cot oga cag atg aaa ogo atg toa acc aaa cat 96 52 Ser Pro Pro Ser Thr Pro Arg Gln Met Lys Arg Met Ser Thr Lys His 25 55 cag agg aat aat gtg ggg agg cca gcc agt cgg tct aat ttg aaa gaa 144 56 Gln Arg Asn Asn Val Gly Arg Pro Ala Ser Arg Ser Asn Leu Lys Glu 57 35 40 59 aaa atg aat gca cca aat cag cct cca cat aaa gac act gga aaa aca 60 Lys Met Asn Ala Pro Asn Gln Pro Pro His Lys Asp Thr Gly Lys Thr 55 63 gtg gag aat gtg gaa gaa tac agc tat aag cag gag aaa aag atc cga 240

64 Val Glu Asn Val Glu Glu Tyr Ser Tyr Lys Gln Glu Lys Lys Ile Arg

PATENT APPLICATION: US/09/676,436

DATE: 11/07/2001 TIME: 15:14:33

65 65 70 75 80	
67 gca gct ctt aga aca aca gag cgt gat cat aaa aaa aat gta cag tgc	288
68 Ala Ala Leu Arg Thr Thr Glu Arg Asp His Lys Lys Asn Val Gln Cys	
69 85 90 95	
71 tca ttc atg tta gac tca gtg ggt gga tct ttg cca aaa aaa tca att	336
72 Ser Phe Met Leu Asp Ser Val Gly Gly Ser Leu Pro Lys Lys Ser Ile	
73 100 105 110	
75 cca gat gtg gat ctc aat aag cct tac ctc agc ctt ggc tgt agc aat	384
76 Pro Asp Val Asp Leu Asn Lys Pro Tyr Leu Ser Leu Gly Cys Ser Asn	
77 115 120 125	
79 gct aag ctt cca gta tct gtg ccc atg cct ata gcc aga cct gca cgc	432
80 Ala Lys Leu Pro Val Ser Val Pro Met Pro Ile Ala Arg Pro Ala Arg	
81 130 135 140	
83 cag act tot agg act gac tgt cca gca gat cgt tta aag ttt ttt gaa	480
84 Gln Thr Ser Arg Thr Asp Cys Pro Ala Asp Arg Leu Lys Phe Phe Glu	
85 145 150 155 160	
87 act tta cga ctt ttg cta aag ctt acc tca gtc tca aag aaa aaa gac	528
88 Thr Leu Arg Leu Leu Lys Leu Thr Ser Val Ser Lys Lys Asp	
89 165 170 175	
91 agg gag caa aga gga caa gaa aat acg tct ggt ttc tgg ctt aac cga	576
92 Arg Glu Gln Arg Gly Gln Glu Asn Thr Ser Gly Phe Trp Leu Asn Arg	
93 180 185 190	624
95 tot aac gaa otg ato tgg tta gag ota caa goo tgg cat goa gga ogg	624
96 Ser Asn Glu Leu Ile Trp Leu Glu Leu Gln Ala Trp His Ala Gly Arg	
97 195 200 205	
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99 aca att aac gac cag gac ttc ttt tta tat aca gcc cgt caa gcc atc	672
100 Thr Ile Asn Asp Gln Asp Phe Phe Leu Tyr Thr Ala Arg Gln Ala Ile	
100 Thr Ile Asn Asp Gln Asp Phe Phe Leu Tyr Thr Ala Arg Gln Ala Ile 101 210 215 220	
100 Thr Ile Asn Asp Gln Asp Phe Phe Leu Tyr Thr Ala Arg Gln Ala Ile 101 210 215 220 103 cca gat att att aat gaa atc ctt act ttc aaa gtc gac tat ggg agc	720
100 Thr Ile Asn Asp Gln Asp Phe Phe Leu Tyr Thr Ala Arg Gln Ala Ile 101 210 215 220 103 cca gat att att aat gaa atc ctt act ttc aaa gtc gac tat ggg agc 104 Pro Asp Ile Ile Asn Glu Ile Leu Thr Phe Lys Val Asp Tyr Gly Ser	720
100 Thr Ile Asn Asp Gln Asp Phe Phe Leu Tyr Thr Ala Arg Gln Ala Ile 101 210 225 215 220 103 cca gat att att aat gaa atc ctt act ttc aaa gtc gac tat ggg agc 104 Pro Asp Ile Ile Asn Glu Ile Leu Thr Phe Lys Val Asp Tyr Gly Ser 105 225 230	720
100 Thr Ile Asn Asp Gln Asp Phe Phe Leu Tyr Thr Ala Arg Gln Ala Ile 101 210 215 220 103 cca gat att att aat gaa atc ctt act ttc aaa gtc gac tat ggg agc 104 Pro Asp Ile Ile Asn Glu Ile Leu Thr Phe Lys Val Asp Tyr Gly Ser 105 225 230 235 240 107 ttc gcc ttt gtt aga gat aga gct ggt ttt aat ggt act tca gta gaa	720
100 Thr Ile Asn Asp Gln Asp Gln Asp Phe Phe Leu Tyr Thr Ala Arg Gln Ala Ile 101 210 225 215 220 103 cca gat att att aat gaa atc ctt act ttc aaa gtc gac tat ggg agc 104 Pro Asp Ile Ile Asn Glu Ile Leu Thr Phe Lys Val Asp Tyr Gly Ser 105 225 230 107 ttc gcc ttt gtt aga gat aga gct ggt ttt aat ggt act tca gta gaa 108 Phe Ala Phe Val Arg Asp Arg Ala Gly Phe Asn Gly Thr Ser Val Glu	720
100 Thr Ile Asn Asp Gln Asp Gln Asp Phe Phe Leu Tyr Thr Ala Arg Gln Ala Ile 101 210 220 220 103 cca gat att att aat gaa atc ctt act ttc aaa gtc gac tat ggg agc 104 Pro Asp Ile Ile Asn Glu Ile Leu Thr Phe Lys Val Asp Tyr Gly Ser 105 225 230 230 107 ttc gcc ttt gtt aga gat aga gct ggt ttt aat ggt act tca gta gaa 108 Phe Ala Phe Val Arg Asp Arg Ala Gly Phe Asn Gly Thr Ser Val Glu 109 255	720 768
100 Thr Ile Asn Asp Gln Asp Phe Phe Leu Tyr Thr Ala Arg Gln Ala Ile 101 210 215 220 220 215 220 2103 cca gat att att aat gaa atc ctt act ttc aaa gtc gac tat ggg agc 104 Pro Asp Ile Ile Asn Glu Ile Leu Thr Phe Lys Val Asp Tyr Gly Ser 105 225 230 235 235 240 207 207 207 207 207 207 207 207 207 20	720 768 816
100 Thr Ile Asn Asp Gln Asp Gln Asp Phe Phe Leu Tyr Thr Ala Arg Gln Ala Ile 101 210 220 220 103 cca gat att att aat gaa atc ctt act ttc aaa gtc gac tat ggg agc 104 Pro Asp Ile Ile Asn Glu Ile Leu Thr Phe Lys Val Asp Tyr Gly Ser 105 225 230 230 107 ttc gcc ttt gtt aga gat aga gct ggt ttt aat ggt act tca gta gaa 108 Phe Ala Phe Val Arg Asp Arg Ala Gly Phe Asn Gly Thr Ser Val Glu 109 245 250 211 ggg cag tgc aaa gcc act cct gga aca aag att gta ggt tac tca aca 111 ggg cag tgc aaa gcc Act cct gga aca aag att gta ggt tac tca aca 112 Gly Gln Cys Lys Ala Thr Pro Gly Thr Lys Ile Val Gly Tyr Ser Thr	720 768 816
100 Thr Ile Asn Asp Asp Gln Asp Phe Phe Leu Tyr Thr Ala Arg Gln Ala Ile 101 210 220 220 103 cca gat att att aat gaa atc ctt act ttc aaa gtc gac tat ggg agc 104 Pro Asp Ile Ile Asn Glu Ile Leu Thr Phe Lys Val Asp Tyr Gly Ser 105 225 230 107 ttc gcc ttt gtt aga gat aga gct ggt ttt aat ggt act tca gta gaa 108 Phe Ala Phe Val Arg Asp Arg Ala Gly Phe Asn Gly Thr Ser Val Glu 109 245 250 211 ggg cag tgc aaa gcc act cct gga aca aag att gta ggt tac tca aca 111 ggg cag tgc aaa gcc act cct gga aca aag att gta ggt tac tca aca 112 Gly Gln Cys Lys Ala Thr Pro Gly Thr Lys Ile Val Gly Tyr Ser Thr 113 Coll Gly Gln Cys Lys Ala Thr Pro Gly Thr Lys Ile Val Gly Tyr Ser Thr 113 Coll Gly Gln Cys Lys Ala Thr Pro Gly Thr Lys Ile Val Gly Tyr Ser Thr 113 Coll Gly Gln Cys Lys Ala Thr Pro Gly Thr Lys Ile Val Gly Tyr Ser Thr 113 Coll Gly Gln Cys Lys Ala Thr	720 768 816
100 Thr Ile Asn Asp Gln Asp Gln Asp Phe Phe Leu Tyr Thr Ala Arg Gln Ala Ile 101 210 220 220 103 cca gat att att aat gaa atc ctt act ttc aaa gtc gac tat ggg agc 104 Pro Asp Ile Ile Asn Glu Ile Leu Thr Phe Lys Val Asp Tyr Gly Ser 105 225 230 230 107 ttc gcc ttt gtt aga gat aga gct ggt ttt aat ggt act tca gta gaa 108 Phe Ala Phe Val Arg Asp Arg Ala Gly Phe Asn Gly Thr Ser Val Glu 109 245 250 211 ggg cag tgc aaa gcc act cct gga aca aag att gta ggt tac tca aca 111 ggg cag tgc aaa gcc act cct gga aca aag att gta ggt tac tca aca 112 Gly Gln Cys Lys Ala Thr Pro Gly Thr Lys Ile Val Gly Tyr Ser Thr 113 260 270 115 cat cat gag cat ctc caa cgc cag agg gtc tca ttt gag cag gta aaa	720 768 816
100 Thr Ile Asn Asp Asp Gln Asp Phe Phe Leu Tyr Thr Ala Arg Gln Ala Ile 101 210 215 220 103 cca gat att att aat gaa atc ctt act ttc aaa gtc gac tat ggg agc 104 Pro Asp Ile Ile Asn Glu Ile Leu Thr Phe Lys Val Asp Tyr Gly Ser 105 225 230 107 ttc gcc ttt gtt aga gat aga gct ggt ttt aat ggt act tca gta gaa 108 Phe Ala Phe Val Arg Asp Arg Ala Gly Phe Asn Gly Thr Ser Val Glu 109	720 768 816
100 Thr Ile Asn Asp Gln Asp Phe Phe Leu Tyr Thr Ala Arg Gln Ala Ile 101	720 768 816 864
100 Thr Ile Asn Asp Asp Gln Asp Phe Phe Leu Tyr Thr Ala Arg Gln Ala Ile 101 210 220 220 103 cca gat att att aat gaa atc ctt act ttc aaa gtc gac tat ggg agc 104 Pro Asp Ile Ile Asn Glu Ile Leu Thr Phe Lys Val Asp Tyr Gly Ser 105 225 230 230 235 235 240 107 ttc gcc ttt gtt aga gat aga gct ggt ttt aat ggt act tca gta gaa 108 Phe Ala Phe Val Arg Asp Arg Ala Gly Phe Asn Gly Thr Ser Val Glu 109 245 250 250 111 ggg cag tgc aaa gcc act cct gga aca aga gt gt tac tca aca 112 Gly Gln Cys Lys Ala Thr Pro Gly Thr Lys Ile Val Gly Tyr Ser Thr 113 cat cat gag cat ctc caa cgc cag agg gtc tca ttt gag cag gta aaa 115 cat cat gag cat ctc caa cgc cag agg gtc tca ttt gag cag gta aaa 116 His His Glu His Leu Gln Arg Gln Arg Val Ser Phe Glu Gln Val Lys 117 275 280 280 119 cgg ata atg gag ctg ctg cta gag tac ata gag ctg cta tat gag ctt tat tat cca tca ttg	720 768 816 864 912
100 Thr Ile Asn Asp Asp Gln Asp Phe Phe Leu Tyr Thr Ala Arg Gln Ala Ile 101 210 220 220 103 cca gat att att aat gaa atc ctt act ttc aaa gtc gac tat ggg agc 104 Pro Asp Ile Ile Asn Glu Ile Leu Thr Phe Lys Val Asp Tyr Gly Ser 105 225 230 230 235 235 240 107 ttc gcc ttt gtt aga gat aga gct ggt ttt aat ggt act tca gta gaa 108 Phe Ala Phe Val Arg Asp Asp Arg Ala Gly Phe Asn Gly Thr Ser Val Glu 109 245 25 25 26 111 ggg cag tgc aaa gcc act cct gga aca aga gt gtg aca ggg aca aca	720 768 816 864 912
100 Thr Ile Asn Asp Gln Asp Phe Phe Leu Tyr Thr Ala Arg Gln Ala Ile 101 210	720 768 816 864 912
100 Thr Ile Asn Asp Gln Asp Gln Asp Phe Phe Leu Tyr Thr Ala Arg Gln Ala Ile 101 210 210 225 220 103 cca gat att att att aat gaa atc ctt act ttc aaa gtc gac tat ggg agc 104 Pro Asp Ile Ile Asn Glu Ile Leu Thr Phe Lys Val Asp Tyr Gly Ser 105 225 230 230 235 240 107 ttc gcc ttt gtt aga gat aga gct ggt ttt aat ggt act tca gta gaa 108 Phe Ala Phe Val Arg Asp Arg Ala Gly Phe Asn Gly Thr Ser Val Glu 109 245 25 25 26 111 ggg cag tgc aaa gcc act cct gga aca aag att gta ggt tac tca aca 112 ggg cag tgc aaa gcc act cct gga aca aag att gta ggt tac tca aca 113 ggg cag tgc aaa gcc act cct gga aca aag gtc tca tca tca gag att gag gtc tca tca tca aca 115 cat cat gag cat ctc caa cgc cag agg gtc tca ttt gag cag gta aaa 116 His His Glu His Leu Gln Arg Gln Arg Val Ser Phe Glu Gln Val Lys 117 275 280 285 119 cgg ata atg gag ctg cta gag tac ata gaa gca ctt tat cca tca ttg 120 Arg Ile Met Glu Leu Leu Glu Tyr Ile Glu Ala Leu Tyr Pro Ser Leu 121 290 295 300 123 cag gct ctt ctc cag aag gac tat gaa aaa tat gct gca aaa gac ttc cag	720 768 816 864 912 960
100 Thr Ile Asn Asp Gln Asp Phe Phe Leu Tyr Thr Ala Arg Gln Ala Ile 101 210	720 768 816 864 912 960
100 Thr Ile Asn Asp Gln Asp Gln Asp Phe Phe Leu Tyr Thr Ala Arg Gln Ala Ile 101 210 215 220 103 cca gat att att aat gaa atc ctt act ttc aaa gtc gac tat ggg agc 104 Pro Asp Ile Ile Asn Glu Ile Leu Thr Phe Lys Val Asp Tyr Gly Ser 105 225 230 107 ttc gcc ttt gtt aga gat aga gct ggt ttt aat ggt act tca gta gaa 108 Phe Ala Phe Val Arg Asp Arg Ala Gly Phe Asn Gly Thr Ser Val Glu 109 245 111 ggg cag tgc aaa gcc act cct gga aca aag att gta ggt tac tca aca 112 Gly Gln Cys Lys Ala Thr Pro Gly Thr Lys Ile Val Gly Tyr Ser Thr 113 260 115 cat cat gag cat ctc caa cgc cag agg gtc tca ttt gag cag gta aaa 116 His His Glu His Leu Gln Arg Gln Arg Val Ser Phe Glu Gln Val Lys 117 275 119 cgg ata atg gag ctg cta gag tac ata gaa gca ctt tat cca tca ttg 120 Arg Ile Met Glu Leu Leu Glu Tyr Ile Glu Ala Leu Tyr Pro Ser Leu 121 290 123 cag gct ctt cag aag gac tat gaa aaa tat gct gca aaa gac ttc cag 124 Gln Ala Leu Gln Lys Asp Tyr Glu Lys Tyr Ala Ala Lys Asp Phe Gln	720 768 816 864 912 960
100 Thr Ile Asn Asp Gln Asp Phe Phe Leu Tyr Thr Ala Arg Gln Ala Ile 101 210	720 768 816 864 912 960
100 Thr Ile Asn Asp Gln Asp Phe Phe Leu Tyr Thr Ala Arg Gln Ala Ile 101	720 768 816 864 912 960

DATE: 11/07/2001 PATENT APPLICATION: US/09/676,436 TIME: 15:14:33

131	aat	cag	aaa	tta	agg	att	atg	ggc	act	gtt	ttg	ggc	atc	aag	aat	tta -	1056
132	Asn	Gln	Lys		Arg	Ile	Met	Gly		Val	Leu	Gly	Ile		Asn	Leu	
133				340					345					350			1104
135	tca	gac	att	ggc	tgg -	cca	gtg	ttt	gaa	atc	CCT	tcc	CCL	cga	cca	CCC	1104
	Ser	Asp		GTA	Trp	Pro	Val		GIU	TTE	Pro	ser		Arg	Pro	ser	
137			355					360		~-+	~~~		365	~~~	<i>α</i> 2 2	++>	1152
139	aaa	ggt	aat	gag	ccg	gag	Tat	gag	ggt	gat	yac	mbr	Clu	Clar	Clu	LLa	1132
	Lys	_	Asn	GIU	Pro	GIU	375	GIU	СТА	ASP	ASP	380	GIU	СТУ	Giu	пец	
141	aaq	370	++~	~ ~ ~ ~	2 ort	2 a t		rat	aaa	ant	паа		αaa	саа	atc	tct	1200
	Lys																1200
145	-	GIU	пец	GIU	561	390	+ 11+T	пър	CIU	DCI	395		014	0		400	
	gat	cct	agg	αta	cca		atc	aσa	cag	ccc		σat	aac	agc	ttc		1248
148	Asp	Pro	Ara	Val	Pro	Glu	Ile	Ara	Gln	Pro	Ile	Asp	Asn	Ser	Phe	Asp	
149	1106		5		405			5		410		-			415	-	
	atc	caq	tca	cqq		tqc	ata	tcc	aaq	aaq	ctt	gag	agg	ctc	gaa	tct	1296
152	Ile	Gln	Ser	Arg	Asp	Cys	Ile	Ser	Lys	Lys	Leu	Glu	Arg	Leu	Glu	Ser	
153				420	-	•			425					430			
155	gag	gat	gat	tct	ctt	ggc	tgg	gga	gca	cca	gac	tgg	agc	aca	gaa	gca	1344
156	Glu	Asp	Asp	Ser	Leu	Gly	Trp	Gly	Ala	Pro	Asp	Trp	Ser	Thr	Glu	Ala	
157			435					440					445				
	ggc																1392
160	Gly	Phe	Ser	Arg	His	Cys	Leu	Thr	Ser	Ile	Tyr		Pro	Phe	Val	Asp	
161		450					455					460					1440
163	aaa	gca	ctg	aag	cag	atg	ggg	tta	aga	aag	tta	att	tta	aga	ctt	cac	1440
	Lys	Ala	Leu	Lys	Gln		Gly	Leu	Arg	Lys		Пе	Leu	Arg	Leu		
	465					470					475	.+.	~~~	++~	~+ ^	480	1488
167	aag	cta	atg	gat	ggt	Com	ttg	Caa	agg	yca	Ara	Tla	y Ca	Tou	y ca V = 1	Luc	1400
	Lys	Leu	мес	ASP	485	ser	Leu	GTII	AIG	490	AIG	TTE	АТа	пец	495	цуз	
169	aac	ant.	aat	003		a a a	+++	tat	паа		cca	aat	CCC	atσ	_	aat	1536
172	Asn	yat Aen	Ara	Dro	Val	Glu	Phe	Ser	Glu	Phe	Pro	Asp	Pro	Met.	Trp	Glv	1300
173	АЗП	изр	nra	500	va.	Olu	1110	001	505	1 110	110			510		1	
	tca	αat	tat		саσ	t.t.a	t.ca	ασσ		cca	cct	tca	tct		qaq	aaa	1584
	Ser																
177			515					520					525			_	
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	Cys																
181	-	530				_	535					540					
	ttc																1680
184	Phe	Glu	Pro	Ala	Phe	Leu	Val	Leu	Cys	Arg	Val	Leu	Leu	Asn	Val	Ile	
	545					550					555					560	
187	cat	gag	tgt	ctg	aag	tta	aga	ttg	gag	cag	aga	cct	gct	gga	gaa	cca	1728
	His	Glu	Cys	Leu	Lys	Leu	Arg	Leu	Glu		Arg	Pro	Ala	Gly		Pro	
189					565					570					575		1
191	tct	ctc	ttg	agt	att	aag	cag	ctg	gtg	aga	gag	tgt	aag	gag	gtc	ctg	1776
	Ser	Leu	Leu		Ile	Lys	Gln	Leu		Arg	Glu	Cys	ьys		val	ьeu	
193				580					585				a t =	590	aa	~~~	1024
195	aag	ggc	ggc	ctg	ctg	atg	aag	cag	tac	tac	cag	LEC	atg	ceg	cag	yay	1824

PATENT APPLICATION: US/09/676,436

DATE: 11/07/2001 TIME: 15:14:33

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199	att	cta	σασ	gac	tta	σασ	aaσ	ccc	gac	tac	aac	at.t.	gac	act.	ttt	gaa	1872
	-	-		-	_		_		_	_			Asp	-		_	
201	,	610	O.L.u	пор	LCu	Olu	615	110	mp	CID	11511	620	M	mu	1110	Olu	
	~~~		a+ a	+		n+~		a + ~	~+~	+-+	+++		+	a + ~		200	1020
													tac				1920
		Asp	Leu	Hls	гля		Leu	Met	Val	туг		Asp	Tyr	Met	Arg		
	625					630					635					640	
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208	${\tt Trp}$	Ile	Gln	Met	Leu	Gln	Gln	Leu	Pro	Gln	Ala	Ser	His	Ser	Leu	Lys	
209					645					650					655		
211	aat	ctg	tta	gaa	gaa	gaa	tgg	aat	ttc	acc	aaa	gaa	ata	act	cat	tac	2016
		_		-	_	-						-	Ile				
213				660			-		665		_			670		•	
	ata	caa	ana		gaa	aca	cad	acc		aan	ctt	ttc	tgt		att	aca	2064
													Cys				2004
217	TTE	AIG	675	Gry	GLU	ΑΙα	GIII	680	Gry	пуз	пец	rne	685	АБР	TTE	AIG	
																	2112
													ttt				2112
	GLY		Leu	Leu	гàг	Ser		GIĀ	ser	Pne	ьeu		Phe	GTA	ьeu	GIn	
221		690					695					700					
		_	_	_	_				_		-	_	agc	_	-		2160
224	Glu	Ser	Cys	Ala	Glu	Phe	$\mathtt{Trp}$	Thr	Ser	Ala	Asp	Asp	Ser	Ser	Ala	Ser	
225	705					710					715					720	
227	gac	gaa	atc	agg	agg	tct	gtt	ata	gag	atc	agt	cga	gcc	ctg	aag	gag	2208
228	Asp	Glu	Ile	Arg	Arg	Ser	Val	Ile	Glu	Ile	Ser	Arq	Ala	Leu	Lys	Glu	
229	-			_	725					730		_			735		
231	ctc	ttc	cat	αaa	acc	aσa	gaa	aσσ	act.	t.cc	aaa	αca	ctt	ααа	t.t.t.	act.	2256
													Leu				
233				740		9	0_u	9	745	001	270		Lou	750	1110		
	222	atα	tta		aan	gac	cta	maa		aca	αca.	ma a	ttc		ctt	tca	2304
		-	_	_	_	-	_	_		_	_	_	Phe				2304
237	цуз	мес	755	AIG	ьуѕ	ASP	neu	760	TIE	Ата	Ата	GIU	765	Arg	теп	ser	
						_4_										_+ _	2252
													aaa -				2352
	Ala		Val	Arg	Asp	Leu		Asp	Val	Leu	Lys		Lys	GIn	Tyr	Val	
241		770					775					780					
	_							_		_		-	ttt	_		_	2400
244	Lys	Val	Gln	Ile	Pro	Gly	Leu	Glu	Asn	Leu	Gln	Met	Phe	Val	Pro	Asp	
245	785					790					795					800	
247	act	ctt	gct	gag	gag	aag	agt	att	att	ttg	cag	tta	ctc	aat	gca	gct	2448
			_			_	_			-	_		Leu		-	-	
249					805	-				810					815		
	gca	σσα	ааσ	gac	tat	tca	aaa	gat	tca		gac	αta	ctc	atc	-	acc	2496
													Leu				2470
253	MIG	GLY	цуз	820	Cys	Der	цуз	изъ	825	изъ	АЗР	Val	пеа	830	пор	ALG	
	+ - +	a+~	a++		200	~		~~+		000	~~~	a+	~~+		~~~	<i>a</i> 2 <i>c</i>	2544
													gat				2544
	туr	ьeu		ьeu	Thr	ьys	HlS	_	Asp	arg	Ата	Arg	Asp	ser	GIU	Asp	
257			835					840					845				
													gtg				2592
260	Ser	$\mathtt{Trp}$	Gly	Thr	$\mathtt{Trp}$	Glu	Ala	Gln	Pro	Val	Lys	Val	Val	Pro	Gln	Val	

DATE: 11/07/2001 PATENT APPLICATION: US/09/676,436 TIME: 15:14:33

261		850					855					860					
263	qaq		qtt	qac	acc	cta		agc	ato	cag	ata		aat.	ctt	tta	cta	2640
															Leu		2010
	865			•		870	,				875					880	
267	gtt	gtc	atg	cag	tct	gcg	cat	ctc	aca	att	caq	aga	aaa	qct	ttc		2688
268	Val	Val	Met	Gln	Ser	Ala	His	Leu	Thr	Ile	Gln	Arq	Lvs	Ala	Phe	Gln	
269					885					890					895		
271	cag	tcc	att	gag	gga	ctt	atq	act	ctq	tqc	caq	gag	caq	aca	tcc	agt	2736
															Ser		
273				900	-				905	-				910			
275	cag	ccg	gtc	atc	gcc	aaa	gct	ttg	cag	caq	ctg	aaq	aat	qat	gca	ttq	2784
276	Gln	Pro	Val	Ile	Ala	Lys	Āla	Leu	Gln	Gln	Leu	Lys	Asn	Asp	Ála	Leu	
277			915					920				-	925	-			
279	gag	cta	tgc	aac	agg	ata	agc	aat	gcc	att	gac	cgc	gtg	gac	cac	atq	2832
280	Glu	Leu	Cys	Asn	Arg	Ile	Ser	Asn	Ala	Ile	Asp	Arg	Val	Asp	His	Met	
281		930					935					940		_			
283	ttc	aca	tca	gaa	ttt	gat	gct	gag	gtt	gat	gaa	tct	gaa	tct	gtc	acc	2880
284	Phe	Thr	Ser	Glu	Phe	Asp	Ala	Glu	Val	Asp	Glu	Ser	$\operatorname{Glu}$	Ser	Val	Thr	
	945					950					955					960	
287	ttg	caa	cag	tac	tac	cga	gaa	gca	atg	att	cag	ggg	tac	aat	ttt	gga	2928
	Leu	Gln	Gln	Tyr		Arg	Glu	Ala	Met	Ile	Gln	Gly	Tyr	Asn	Phe	Gly	
289					965					970					975		
291	ttt	gag	tat	cat	aaa	gaa	gtt	gtt	cgt	ttg	atg	tct	ggg	gag	ttt	aga	2976
	Phe	GLu	Tyr		Lys	Glu	Val	Val		Leu	Met	Ser	Gly	Glu	Phe	Arg	
293				980					985					990			
295	cag	aag	ata	gga	gac	aaa	tat	ata	agc	ttt	gcc	cgg	aag	tgg	atg	aat	3024
	GIn	Lys		GLY	Asp	Lys	Tyr			Phe	Ala	Arg	_	_	Met	Asn	
297	+-+	~-h ~-	995					1000					1005				
															agg		3072
301	TYL	101(		THE	rys	Cys			GLY	Arg	GLŸ			Pro	Arg	Trp	
	aca			~~~	+++	~~+	1015		~~~			1020					2100
307	ηla	Thr.	Cln	Clu	Dho	yaı	Dho	CLA	Caa	gca	att	gaa	CCT	gcc	ttt	att	3120
	1025		GIII	СТУ	Pile	1030		ьеu	GIII	Ата			Pro	Ата	Phe		
			++>	003	<i>α</i> 2 2			++0	++~	n ~+	1035					1040	2160
307	Sor	ηcι	Lou	Dro	Clu	yaı Nan	yac Aan	Dho	Tou	con	LLa	Caa	ycc 110	LLG	atg Met	aat	3168
309	DEI	AIG	ьеu	FIU	1045		ASP	Pile	ьец	1050		GIII	АІа	Leu			
	паа	tac	att	aac			ata	aas	222			204	aat	a++	1055 aca		2216
312	Glu	Cve	Tla	Glv	Hic	Val	Tla	Gl ₁₇	Tue	Dro	Uic	cor	Dro	y	Thr	ggı	3216
313	Olu	Cys	110	1060		Val	116	GIY	1065		птэ	ser	PIU	1070		GIY	
	t.t.a	tac	ctt			cat	caa	aac			cat	cct	atα		gta	cat	3264
316	Leu	Tvr	Leu	Ala	Tle	His	Ara	Asn	Ser	Pro	Δra	Pro	Mot	T.ve	Val	Dro	3204
317		-1-	1075				9	1080			**** 9	110	1085		vu.	110	
	cqa	tac			σac	cct	cat			cac	ctc	att			act	CCa	3312
320	Arq	Cvs	His	Ser	Asp	Pro	Pro	Asn	Pro	His	Len	Tle	Tle	Pro	Thr	Dro	3314
321	,	1090			F		1095				u	1100		0	T 11T	110	
	gag			agg	ggt	tcc			cct	gaa	aat			tta	gct	tee	3360
324	Ğlu	Gly	Phe	Arq	Ğĺy	Ser	Ser	Val	Pro	Glu	Asn	Asp	Ara	Leu	Ala	Ser	5500
325	1105	-		,	•	1110			-		1115		5			1120	

## VERIFICATION SUMMARY

PATENT APPLICATION: US/09/676,436

DATE: 11/07/2001 TIME: 15:14:34

```
L:12 M:270 C: Current Application Number differs, Replaced Current Application No
L:12 M:271 C: Current Filing Date differs, Replaced Current Filing Date
L:20 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:31 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:420 M:334 W: (2) Invalid Amino Acid in Coding Region, NUMBER OF INVALID KEYS:1
L:445 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:456 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:467 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:478\ M:258\ W: Mandatory Feature missing, <220> FEATURE:
L:489 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:500 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:960 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:971 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:982 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:993 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1004 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1015 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1026 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1037 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1048 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1059 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1070 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1081 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1092 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1103 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1114 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1125 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1136 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1147 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1158 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1169 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1180 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1191 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1202 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1213 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1224 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1235 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1246 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1257 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1268 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1279 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1290 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1301\ M:258\ W: Mandatory Feature missing, <220> FEATURE:
L:1312\ M:258\ W: Mandatory Feature missing, <220> FEATURE:
L:1323\ M:258\ W: Mandatory Feature missing, <220> FEATURE:
L:1334 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1345 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1356 M:258 W: Mandatory Feature missing, <220> FEATURE:
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VERIFICATION SUMMARY

PATENT APPLICATION: US/09/676,436

DATE: 11/07/2001 TIME: 15:14:34

Input Set : A:\RTS-0169_Seq_ASCII.txt
Output Set: N:\CRF3\11072001\1676436.raw

L:1367 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1378 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1389 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1400 M:258 W: Mandatory Feature missing, <220> FEATURE:
L:1411 M:258 W: Mandatory Feature missing, <220> FEATURE: